UNIVERSITI TEKNOLOGI MARA
CAWANGAN PULAU PINANG

HIDDEN PLANAR ANTENNA FOR REMOTE KEYLESS ENTRY SYSTEM

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ABSTRACT

This paper describes a miniaturized low cost printed circuit board planar antenna. The antenna is developed for application of Remote Keyless Entry (RKE) system. The antenna is designed, simulated, fabricated and measured. The antenna frequency is designed at 433 MHz which is commonly used in Europe for RKE system. The dimension of the antenna is 39 mm width and 95 mm length and is implemented on an FR-4 dielectric substrate with a thickness of 1.6 mm. The relative permittivity of the FR-4 is 4.4. Meander line antenna structure with coplanar feed line method technique is used in order to reduce the size of the antenna. CST Microwave Studio software is used to measure the performance of the designed antenna. The software is used as guideline before the real prototype is fabricated. The antenna is investigated based on the return loss, gain and radiation pattern. The antenna is measured in the Microwave Laboratory of Universiti Teknologi MARA Cawangan Pulau Pinang Kampus Permatang Pauh. The simulated result of the antenna shows a positive result with a maximum gain of 0.93 dBi and -10dB bandwidth of 7 MHz. The details and performance results of the antenna is discussed.

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